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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Daisuke Inomata

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7590

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EXAMINER

ANDUJAR, LEONARDO

ART UNIT

PAPER NUMBER

2826

DATE MAILED: 03/01/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

E/C

Office Action Summary	Application No. 10/736,694	Applicant(s) INOMATA, DAISUKE	
	Examiner Leonardo Andújar	Art Unit 2826	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on 29 November 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4,7-11 and 14-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4,7-11 and 14-22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>8/05</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Acknowledgment

1. The amendment filed on 11/29/2005 in response to the Office action mailed on 07/29/2005 has been entered. The present Office action is made with all the suggested amendments being fully considered. Accordingly, pending in this Office action are claims 1-4, 7-11 and 14-22.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1, 2, 9, 12 and 16-18 are rejected under 35 U.S.C. 102(b) as being anticipated by Sony (JP 2000133572 cited by applicant).

4. Regarding claim 1, Sony (e.g. fig. 4) shows a semiconductor device comprising: a substrate 14 which has a main surface; and an alignment mark which is formed on the main surface and which has a pattern 12 wherein the pattern in a plane view has a shape that is obtained by eliminating corners from a polygon. Also, Sony shows an oxidation prevention cover film 15/16 on the alignment mark and formed having a pattern 13.

5. Regarding claim 2, Sony shows that the polygon is a rectangle.

6. Regarding claim 9, Sony (e.g. fig. 4) a semiconductor device comprising: a substrate 14 which has a main surface; and an alignment mark which is formed on the main surface and which has first through fourth sub patterns 12, wherein the first and second sub patterns (right and left) are arranged so as to oppose each other, the third and fourth sub patterns (top and bottom) are arranged so as to oppose each other and wherein the first through fourth sub patterns are separated from one another and an oxidation preventing cover film 15/16 on the alignment mark and formed as having first through fourth sub patterns 13.

7. Regarding claim 12, Sato shows a cover film 76 formed over the metal film to prevent the oxidation of the metal film.

8. Regarding claims 16 and 18, Sony (e.g. fig. 4) shows most aspects of the instant invention including a semiconductor device comprising: a substrate 14 having a main surface; an alignment mark on the main surface of the substrate, wherein the alignment mark is strip like and has the shape of a polygon without corners along a plane parallel to the main surface of the substrate; and an oxidation prevention film 15/16 on the alignment mark, wherein the oxidation prevention cover film is strip like (13) and has annular shape (i.e. rectangular) along another plane parallel to the main surface of the substrate.

9. Regarding claim 17, Sony teaches that the polygon is a rectangle.

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. Claims 3, 7, 8, 10, 14, 15, 19, 20 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sony (JP 2000133572 cited by applicant).

12. Regarding claims 3, 10, 19; Sony shows most aspects of the instant invention including an alignment mark pattern having a thickness. However, Sony does not disclose that the thickness is in a range 0.6 to 0.8 μm . The specific pattern thickness as claimed by applicant, i.e., 0.6 to 0.8 μm , is only considered to be the "optimum" thickness of the alignment mark pattern disclosed by the Prior Art that a person having ordinary skill in the art would have been able to determine using routine experimentation based, among other things, on the desired accuracy, manufacturing costs, etc. (see *In re Boesch*, 205 USPQ 215 (CCPA 1980)). Furthermore, it is noted that the specification fails to provide teachings about the criticality of the claimed thickness. Thickness differences will not support the patentability of subject matter encompassed by the prior art unless there is evidence indicating such thickness range is critical. "Where the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the workable ranges by routine experimentation". *In re Aller*, 220 F.2d 454,456,105 USPQ 233, 235 (CCPA 1955). Since the applicant has not established the criticality (see next paragraph) of the claimed alignment mark thickness range, it would have been obvious to one of ordinary skill in the art to use these values in the device disclosed by Sony.

CRITICALITY

The specification contains no disclosure of either the critical nature of the claimed plasma exposure time or any unexpected results arising therefrom. Where patentability is said to be based upon particular chosen dimensions or upon another variable recited in a claim, the applicant must show that the chosen dimensions are critical. In re Woodruff, 919 F.2d 1575, 1578, 16 USPQ2d 1934, 1936 (Fed. Cir. 1990).

13. Regarding claims 7, 14 and 20, Sony shows most aspects of the instant invention including a pattern in the oxidation preventing film having a first width and an alignment mark pattern having a second width. However, Sony does not disclose that the first width is wider by one or more micrometers than the second width. The specific pattern width relation as claimed by applicant, is only considered to be the "optimum" thickness of the alignment mark patterns disclosed by the Prior Art that a person having ordinary skill in the art would have been able to determine using routine experimentation based, among other things, on the desired accuracy, manufacturing costs, etc.

14. Regarding claims 8, 15 and 22, Sony discloses the claimed invention except for a cover film made of iridium based metal. It would have been obvious to one having ordinary skill in the art at the time the invention was made to make the cover film made of iridium based metal, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. *In re Leshin*, 125 USPQ 416.

15. Claims 4, 11 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sony (JP 2000133572 cited by applicant) in view of Sato et al. (JP 2002064055, previously cited).

16. Regarding claims 4, 11 and 21, Sony discloses the claimed invention except for an alignment mark pattern comprising a metal. Nevertheless, Sato (e.g. pp 0089) teaches that aluminum can be used to make alignment mark pattern films. It would have been obvious to one having ordinary skill in the art at the time the invention was made to make the alignment mark pattern film of metal as taught by Sato, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. *In re Leshin*, 125 USPQ 416.

Response to Arguments

17. Applicant's arguments with respect to claims 1-4, 7-11 and 14-22 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

18. Applicant's submission of an information disclosure statement under 37 CFR 1.97(c) with the fee set forth in 37 CFR 1.17(p) on 8/17/2005 prompted the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 609.04(b). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any

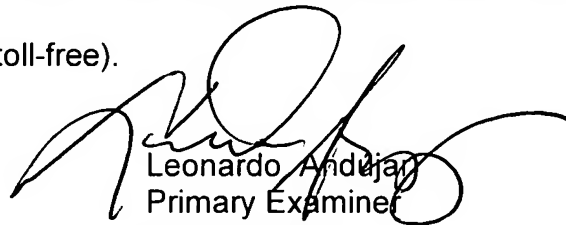
Art Unit: 2826

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

19. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Leonardo Andújar whose telephone number is 571-272-1912. The examiner can normally be reached on Mon through Thu from 9:00 AM to 7:30 PM EST.

20. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nathan J. Flynn can be reached on 571-272-1915. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

21. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Leonardo Andújar
Primary Examiner
Art Unit 2826